

even in the smaller forms and a large form like *Closterium* is ruined. The following method, discovered in the botanical laboratories at the University of Nebraska, has been found to combine the good fixation and preservation of the bulk method with the precision of staining and the ease of handling secured by drying the cells to the slide.

The material is killed and fixed in whatever solution the investigator has found most satisfactory for the particular group of algæ or Protozoa with which he is working. It is washed in bulk in the usual manner and carried through a graded series of alcohols until a strength of about sixty per cent. is reached. It is allowed to settle completely in this grade. A very thin layer of albumen fixative is smeared upon the thoroughly cleaned slides. A drop of the material is then drawn up with a pipette and placed upon the slide. The sixty per cent. alcohol in which it is lying coagulates the albumen and causes a surprisingly large number of cells to be firmly fixed to the slide. They may now be dipped directly into sixty per cent. alcohol and successively into higher grades. It is possible to use such stains as Flemming's triple and iron-alum hæmatoxilin rapidly and with precision. Before using a stain like Flemming's triple it is usually well to harden the cells thoroughly in ninety-five per cent alcohol, and then proceed as usual.

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#### METHOD TO CLEAN USED MICROSCOPIC SLIDES

Especially where a course is given in microscopic technic there are usually a large number of worthless slides prepared. To throw them away seems an extravagance and yet to clean them in waste-xylol is practically a waste of time.

The method I am about to suggest may be well known, yet I think it will bear repeating. There had been a large number of old slides collecting from year to year in our department, worthless and merely occupying space, yet no one cared to assume the responsibility of throwing them away. Recently Professor Reese head of the department, suggested we try gold dust in an attempt to clean them.

A liberal amount of gold dust and a number of the slides, some of them dated 1902, were placed in water, and thoroughly boiled. As soon as the cover slips came off of their own accord, the slides and slips were placed in a pan of water. These were wiped dry while others were being boiled. The ease with which they can be cleaned and dried and the small amount of time required compared to the waste-xylol method, makes it a very profitable undertaking.

On taking them from the gold dust solution they were first placed in waste alcohol, but it was found by placing them in water they could be cleaned and dried much easier.

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#### ENTOMOLOGICAL NOTES

*Chromosomes of Notonecta.*—Browne ('16, Journ. Morph., 27:119-162) has made a comparative study of the chromosomes of five North American species of *Notonecta* (*undulata*, *irrorata*, *insulata*, *shooterii*, and *indica*) and one species of the same genus from Europe (*glauca*). Among other things, it was found that an XY pair of chromosomes is present in each of the above-mentioned species, the components of which divide separately in the first division and go to the opposite poles in the second. The X and Y chromosomes vary in size in the cells of the different species as well as in the cells of different individuals of the same species. They are almost equal in most of the cells of certain individuals of *shooterii*, while in *indica* they are distinctly unequal. *Undulata*, *indica*, and *shooterii* have 14 chromosomes in the first division, 13 in the second, and 26 in the diploid groups. *Irrorata* and *glauca* have 13 chromosomes in the first division, 12 in the second, and 24 in the diploid groups. *Insulata* has 14 or 13 chromosomes in the first division and 12 in the second. Large double chromosomes occur in *insulata*, *glauca*, and *indica*. No definite correlation of the somatic characters of the different species with the difference in chromosomes number and arrangement was discovered, although it was found that the 14-chromosome species are the smaller and the 13-chromosome ones are the larger. It thus appears that while,